DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Casey, William
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-027733
Date Inspected: 11-Jun-2012

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 700
OSM Departure Time: 1730
Location: Job Site

CWI Name: As noted below.

Inspected CWI report:	☐ Yes	☐ No	☑ N/A	**CWI Present:**	☑ Yes	☐ No	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
				Approved WPS:	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: Tower Component

Summary of Items Observed:

Quality Assurance Inspector (QA) William Clifford was at the American Bridge/Fluor (ABF) job site at Yerba Buena Island in California between the times noted above in order to monitor Quality Control functions and the in process work being performed by ABF personnel. The following items were observed:

Electroslag Weld Repairs

This QA randomly observed ABF/JV qualified welder Wai Kit Li #2953 performing Shielded Metal Arc Welding (SMAW) with 3.2mm" diameter E7018H4R electrode and implementing Caltrans approved Welding Procedure Specification's (WPS) ABF-WPS-D15-1001. The joint being welded was tower shear plate designated as ESW weld, location "T" from face A.

Dimensions excavated for these repairs were:
Weld "T" – Y=9420mm, L=310mm, W=50mm, D=55mm
Weld "T" – Y=9135mm, L=190mm, W=50mm, D=55mm

During welding, ABF Quality Control (QC) Bernie Docena was noted monitoring the welding parameters. Welding parameters were recorded as (A=122).

This QA randomly observed ABF/JV qualified welder Xiao Hua Luo #1291 performing Shielded Metal Arc Welding (SMAW) with 3.2mm" diameter E7018H4R electrode and implementing Caltrans approved Welding Procedure Specification's (WPS) ABF-WPS-D15-1001. The joint being welded was tower shear plate designated as ESW weld, location "H" from face A.

Dimensions excavated for this repair were:

Weld “H” – Y=1710mm, L=170mm, W=38mm, D=18mm

During welding, ABF Quality Control (QC) Bernie Docena was noted monitoring the welding parameters. Welding parameters were recorded as (A=123).

This QA observed, at random intervals, ABF/JV qualified welder Xiao Jian Wan #9677 performing Flux Core Arc Welding (FCAW) implementing Caltrans approved Welding Procedure Specification Specification (WPS) ABF-WPS-D15-3000-3Repair. The joint being welded was tower shear plate designated as ESW weld, location “M” from face B.

Dimensions excavated for this repair were:

Weld “M” – Y=9280mm, L=230mm, W=40mm, D=22mm

During welding, ABF Quality Control (QC) Bernie Docena was noted monitoring the welding parameters. Welding parameters were recorded as (A=251, V=23.5).

Electroslag Weld Excavations

This QA randomly observed ABF/JV welding personnel performing excavation of a weld previously repaired from face A. Quality Control (QC) Inspector Bernie Docena performed Magnetic Particle (MT) and visual confirmation of the excavation. QC observed no rejectable indications at the completion of excavation.

Excavation was recorded as follows:

Weld “M” – Y=9280mm, L=230mm, W=40mm, D=22mm

This QA Inspector performed confirmation Magnetic Particle Testing (MT) of weld repair excavation on the above mentioned tower electroslag weld. This QA observed no rejectable indications at the time of testing.

This QA observed ABF/JV welding personnel Jin Pei Wang #7299 performing the continued excavation of an Electroslag Weld (ESW) previously Ultrasonic Tested (UT) by Quality Control (QC) technicians.

The UT discovered indications were found to be oriented in the longitudinal position. The indications were found to range from rejectable per AWS D1.5 Table 6.4 to within the recordable criteria to be subject to further Radiographic Testing (RT).

The weld being excavated is designated as “ESW T” and was excavated at locations:

Weld “T” – Y=7580mm, L=150mm, W=55mm, D=53mm

Weld “T” – Y=5410mm, L=130mm, W=55mm, D=54mm

Weld “T” – Y=6810mm, L=620mm, W=55mm, D=50mm

The carbon arc gouging process, as well as machine grinding, were used to excavated approximately 2mm-5mm at a time. In between excavation passes both QA and QC performed Magnetic Particle Testing (MT) and photographed the removal of discovered indications.

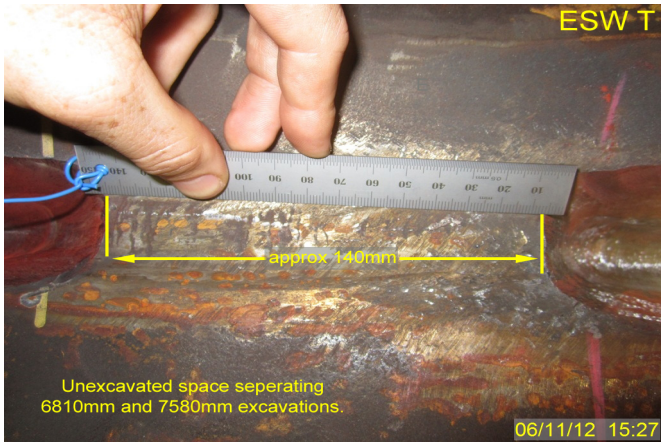
Throughout this excavation this QA observed and photographed multiple longitudinal linear indications ranging in sizes from approximately 20mm to 150mm.

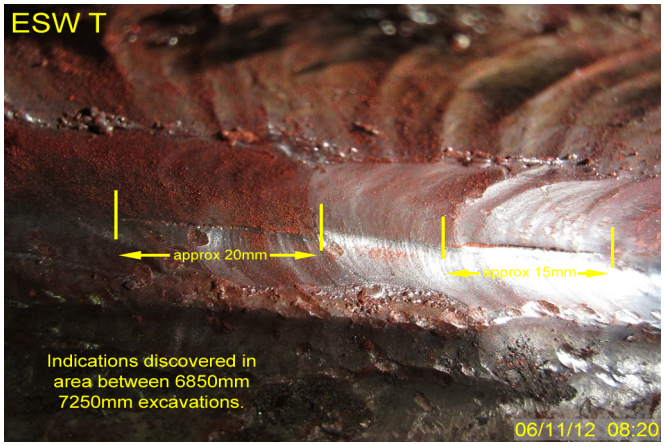
Please see attached photographs for representative samples of indications observed.

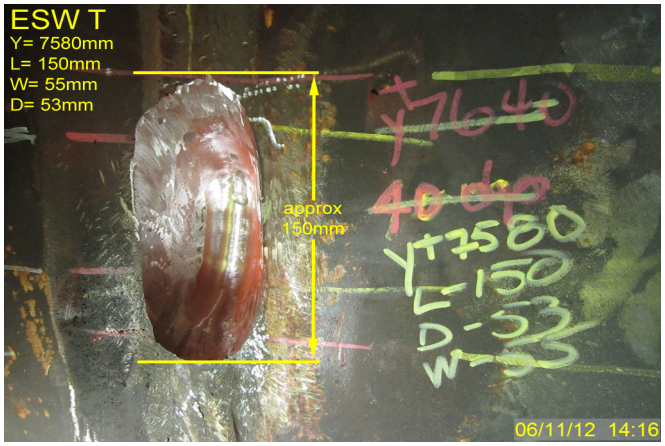
QC MT and data recording was performed by Jesse Cayabyab and Bernie Docena.

Unless otherwise noted, all work observed on this date appeared to generally comply with applicable contract

documents.







Summary of Conversations:

Conversations were relevant to testing performed and indications discovered during excavation.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact SMR Nina Choy (510) 385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Clifford,William	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer